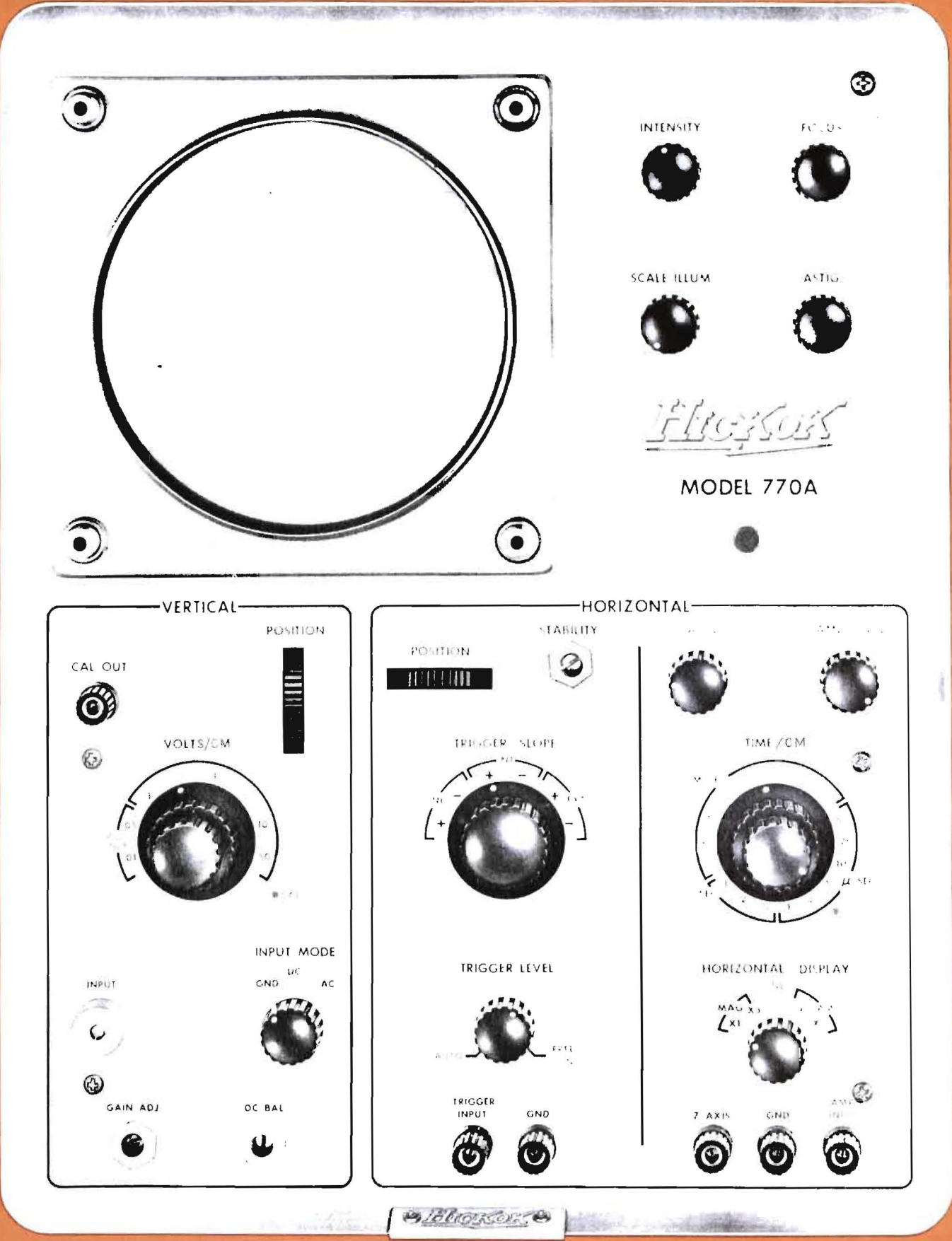


GENERAL PURPOSE 'SCOPE





580 Laboratory and Industrial Portable Tube Tester

An entirely new instrument which can be set up directly to any tube test condition without having to rely upon the built-in roll chart. All tube test potentials individually variable. Accommodates 4-, 5-, 6-, 7-pin, loctal, octal, 7-, 9- and 10-pin miniature, 7- and 8-pin subminiature, 5- and 7-pin Nuvistors, Compactrons and Novars. Leakage test sensitivity to 50 megohms. Gas test circuit detects grid current to 0.05 microamperes. Gm range to 60,000 μ hos. Cathode reserve test. Push button feature speeds checks on dual section tubes.



539C Industrial and Laboratory Portable Tube Tester

Tests all the latest tubes, including Compactrons, Novars, 5 and 7-pin Nuvistors, 10-pin "headers," VR tubes, low power thyratrons, "4-digit" types. VR test evaluates voltage regulator tubes under actual operating conditions. This model also has provisions for separate monitoring of plate current. Panel terminals provide access to grid, plate, cathode and heater circuits, permitting direct measurement of voltages and current for "non-standard" or "tailored" tests. Covers 600 to 60,000 μ hos in six ranges. Metered line voltage, metered grid voltage. Dual leakage readings: directly on meter or by neon short indicator (Sensitivity to 50 megohms).



123R Cardmatic® Tube Tester

Automatic mutual conductance tube tester featuring simplified card operation for speed and accuracy. Perforated vinyl cards set up entire circuit for complete range of tests, including "fringe", saturation and cut-off tests, in addition to basic Gm measurement. Gm ranges: 500-26,000 μ hos. Current ranges: 100 μ a to 510 ma. The 123R Cardmatic Tube Tester comes supplied with 500 selected test cards covering both industrial and entertainment tubes. Additional cards are available and can be ordered direct from Hickok.

Hickok manufactures a complete line of electronic test equipment for industrial electronic maintenance and electronic research applications. Hickok engineering is constantly providing the most advanced design instruments to keep pace with the dynamic electronics industry.

For more information see your Hickok distributor or write to:

**THE HICKOK
ELECTRICAL INSTRUMENT CO.**

Hickok

10514 DUPONT AVENUE • CLEVELAND, OHIO 44108

Hickok

Model 770A

Features:

- Calibrated Horizontal Sweep—18 ranges 0.5 sec/cm to 1 μ sec/cm (with 5X expansion to 0.2 μ sec/cm).
- Triggered Sweeps.
- Choice of automatic, driven or free running sweep modes.
- Calibrated vertical amplifier with .01v/cm maximum sensitivity.
- 5" Flat-faced, post-accelerated CRT.
- DC to 4 mc vertical response (with Gaussian roll-off to provide true pulse reproduction).

Technical Specifications

VERTICAL DEFLECTION SYSTEM

Provides choice of two band-width sensitivities; 3 cycles to 3.5MC at 0.01v/div. (equivalent to 26mv p-p/inch) and DC to 4.0mc at 0.1v/div.

Eight step attenuator with steps of 0.01, 0.05, 0.1, 0.5, 1.0, 5.0, 10 and 50v/div. accurate to within 5%, plus vernier attenuator with 5:1 range for range overlap and extension of last range.

Input impedance is equivalent to 1 megohm shunted by 40 pf. Maximum input voltage is 600v p-p. Input connector is standard SO-239 Coaxial type.

Input selector switch provides choice of DC input, AC input (0.1 μ fd series Capacitor into 1 megohm) and input shunted to chassis ground.

Vertical positioning control permits shift to 2½ times full screen and is symmetrical about graticule center-line to within ± 1 division.

Direct access to deflection plates is also provided.

HORIZONTAL DEFLECTION SYSTEM

The horizontal sweep generator incorporates a miller run-up circuit. The circuit makes possible a wide choice of writing speeds from 0.2 μ sec/div. to 1.5 sec/div.

An 18 position sweep rate selector provides steps of 1, 2, 5, 10, 20, 50 μ sec/div., 0.1, 0.2, 0.5, 1, 2, 5, 10, 20, 50 msec/div. and 0.1, 0.2 and 0.5 sec. div. accurate to within $\pm 3\%$. Sweep vernier provides 3:1 changes and extends lowest range to 1.5 sec. div.

Horizontal magnifier expands sweep rate 5 times and extends highest range to 0.2 μ sec/div. Accuracy is within $\pm 3\%$.

Three operational modes of the internal sweep generator are provided: free-running, driven and automatic. In the free-running mode, the sweep is recurrent. In the driven mode the sweep is initiated by a triggering pulse. In the automatic mode, the sweep is supplied constant rate trigger pulses by a free-running multivibrator until a sync signal is applied which overrides the multivibrator rate. Synchronization is achieved by adjusting the sync control between its free-running and automatic positions.

The horizontal selector provides sweep magnification and a choice of three operating modes: direct input to the horizontal amplifier, 60 cycle line input, and input from the sweep generator. The sweep sync selector has six positions: internal + and -, external + and -, and line + and -. The 60 cycle line sweep is provided with a variable phase control adjustable over approximately 180°.

The internal horizontal amplifier has a pass band to 600 KC (within 3db). A two step (X1 and X10) attenuator and vernier gain control with 10:1 range are provided.

GENERAL

The instrument incorporates sweep magnification registration on internal sweep functions. Registration is held within $\pm \frac{1}{2}$ major division.

Internal calibrating signal available at front panel provides 60 cycle square wave at 1 volt p-p $\pm 3\%$.

Access to the Z axis is provided, requiring 14V p-p for beam cut-off.

POWER REQUIREMENTS:

105-125 volts, 50/60 cycles, 130 watts furnished complete with operating manual and leads.

CASE SPECIFICATIONS

Furnished in an attractive steel case, with non-glare crinkle finish, 13¾" H., 11" W., 17½" D. 45 lbs. net weight.